

DETERMINATION

Dominance in Interconnection Markets

Dominance in Interconnection Markets

A Determination by the Telecommunications
Regulatory Authority

9 August 2003

Purpose: Determination of dominance in certain interconnection markets.



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1 Summary - Dominance of Batelco in Interconnection services

The TRA is of the view that the relevant wholesale, or operator-to-operator, 'product markets' for interconnection services are presently as follows:

- Call termination on fixed networks.
- The market for mobile call termination and retail service.
- The market for international correspondent services, including international switching and conveyance.

The TRA has determined Batelco to be in a dominant position in these markets (Section 4). Batelco's Reference Interconnect Offer (RIO) should therefore at a minimum be developed around these services.

The TRA considers that the geographic scope of all the markets identified above is the Kingdom of Bahrain.

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2 Introduction

2.1 Relation to previous Consultation documents

This determination is issued pursuant to sections 3, 57 and 58 of the Telecommunications Law relating to Interconnection and Access, and, Tariffs for Telecommunication services. It follows two Consultation documents published by the TRA on 15th March 2003 and 2nd June 2003 respectively.

The nature of the responses that have been received, has resulted in the TRA extending the scope of this document to encompass not only the identification of dominance in defined markets, as it applies to various types of licensee, but also to discuss the regulatory measures that will be applied in response to a finding of dominance.

This document is primarily focussed on a consideration of the circumstances that apply in the period until mid-2004, although in order to address these issues, in certain places we have outlined the situation that may prevail after full liberalisation occurs in July 2004.

2.2 The present Document

Before being able to determine dominance, and in particular the dominance of Batelco, the TRA must define the relevant markets in which such dominance applies. Where these markets concern interconnection between licensed Public Telecommunications Operators, and where Batelco is found to be dominant, this determination initiates a 3-month period within which Batelco must develop and publish its Reference Interconnect Offer (RIO), which must include all relevant interconnection services. The TRA may "...issue an order specifying the terms and tariffs if it does not approve the contents of such offer in this respect, which order shall be effective from the date of issue, unless the Authority specifies another date".

The RIO will form the basis for any interconnection agreement reached between Batelco and other licensed operators. Unless the TRA specifies otherwise, interconnection prices in the RIO should be based on a forward-looking long-run incremental cost methodologyⁱ.

Where dominance relates to connection between Batelco and entities that are not licensed Public Telecommunications Operators, then the connection between them is termed as 'access' rather than interconnection (see section 3.3). Note that 'access' may also include physical or logical connections between licensed Public Telecommunications Operators. The law notes that the TRA may require a dominant operator to provide a Reference Access Offer (RAO).

A RIO will include many services that when supplied by themselves outside of the scope of interconnection, would normally be provided in accordance with regulations dealing with access.

In addition to interconnection and the services included in a RIO by a dominant operator, there are several markets and related services for which licensed service providers and operators can rightly expect access. These markets will be identified and discussed in a subsequent Consultation paper that will be published shortly. This impending paper will address those initial cases for which the TRA is considering requiring Batelco to publish a RAO, and a description of the terms and conditions the

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TRA is minded to require of these access offers. Several of these access services should also be included in a RIO.

At present there is no market that is operating for interconnection or access within Bahrain, as Batelco is *de facto* the only operator providing telecommunications services. This situation is in the process of changing with the licensing of a Second Mobile Operator (SMO), and will change further with the establishment of the Bahrain Internet Exchange (BIX), and when entry by independent internet service providers (ISP) and value added service (VAS) providers occurs. Thus, there will shortly be demand in Bahrain for different interconnection and access services, and the set of relevant interconnection markets the TRA has defined in this Determination is intended to reflect this.

In general, the TRA will pursue cost-based prices (i.e. based on long-run incremental cost) for interconnection to facilities or services that cannot be economically replicated by new entrants, or where the interconnection is required by them to compete with a dominant incumbent on relatively equal terms. In enduring dominance cases, the TRA's view is that this costing rule may reasonably also apply in the provision of access by a dominant operator, to licensed Public Telecommunications Operators or Licensed Telecommunications Service Providers. However, where dominance is not expected to be enduring, access prices are more likely to be required to be set at wholesale rates.

2.3 Transition to full liberalisation

From July 2004, the Bahrain market for telecommunications services will be fully opened to permit the entry of competition. This may result in three important types of changes occurring as competition subsequently develops:

1. Changes in market definitions;
2. The reassessment of Batelco's dominance in some cases depending on market developments, and
3. Changes in the nature or cause of Batelco's dominance in certain markets.

The changes outlined by the three points above, and the consequential impact on the Bahraini telecommunications sector have been taken in to account by the TRA in addressing Batelco's dominance in the period leading up to July 2004, such that changes occurring with the arrival of full liberalisation after July 2004 do not result in undue disruption to the supply of services and their pricing to other operators, companies or consumers. At several places in this document the TRA has identified some of these issues.

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3 Definitions and relevant references within the telecommunications law and licences

3.1 Regarding dominance

A telecommunications operator is dominant if it is in a dominant position, which is defined by the Telecommunications Law, as follows:

“Dominant position”: the Licensee’s position of economic power that enables it to prevent the existence and continuation of effective competition in the relevant market through the ability of the Licensee to act independently – to a material extent – of competitors, subscribers and users.

3.2 Regarding Interconnection and Public Telecommunications Operators

“Interconnection”: the physical and logical linking of telecommunications networks used by the same or a different organisation in order to allow the users of one organisation to communicate with users of the same or another organisation, or to access services provided by another organisation;

“Telecommunications network”: a network permitting the conveyance of messages, sound, visual images or signals between defined termination points by wire, radio, optical or other electro-magnetic means;

“Public telecommunications operator”: a licensed operator authorized to provide public telecommunications services or to operate a public telecommunications network **under an individual license**;

A public telecommunications operator shall have the right to interconnect, and the obligation to negotiate in good faith on request the interconnection of, its telecommunications network to the telecommunications network of another public telecommunications operator at any technical feasible point, in each case as specified in its license or in a regulation issued by the Authority.

A licensee that is determined to be dominant in a relevant market can be required to file a reference interconnection offer. It can also be required to provide fair and non-discriminatory access to certain facilities or services where it is considered uneconomic for competitors to provide these themselves.

A **Reference Interconnect Offer (RIO)** is defined as:

A published reference document that sets out the full list of basic interconnect services and the terms and conditions, including charges, on which the licensee offers to interconnect with other licensees. The offer forms the basis of commercial negotiations between licensees to establish interconnect.

The Authority may issue an order specifying the terms and tariffs if it does not approve the contents of such offer in this respect, which order shall be effective from the date of issue, unless the Authority specifies another date.

3.3 Regarding access

“Access”: the making available of telecommunications facilities and/or telecommunications services to another licensed operator for the purpose of providing telecommunications services, and including the connection of equipment by wire or wireless means,

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access to physical infrastructure including buildings, ducts and masts, access to mobile networks and access to number translation or networks offering equivalent functionality.

A “**Reference Access Offer**” is defined as provided for in the third paragraph of Section 57(e) of the Law read with Section 57(b) thereof, as a published reference document that sets out the full list of access services and the terms and conditions, including charges, on which the licensee offers to provide access for other licensees.

3.4 Regarding calls

“**Call**” includes any communication conveying voice and data:

- (a) whether between persons and persons, things and things or persons and things;
- (b) whether in the form of speech, music or other sounds;
- (c) whether in the form of data;
- (d) whether in the form of text;
- (e) whether in the form of visual images (animated or otherwise);
- (f) whether in the form of signals; and
- (g) whether in any combination of the foregoing forms.

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4 Relevant interconnection markets

4.1 Fixed services

For fixed networks, the types of services commonly discussed under the term “interconnection” include call termination and call origination, and may also include transport or transit services.

In the context of the licensing of a second mobile operator, the TRA has identified in its Consultations that the relevant market is:

- Mobile to fixed termination.

This represents the form of terminating interconnection that will be required by the second mobile operator (SMO), i.e. termination of calls made by users of Mobile Network Operator (MNO) services on the fixed public telecommunications network.

Batelco is self evidently dominant in the provision of mobile to fixed termination by virtue of being the only operator of a fixed public telecommunications network in Bahrain. Batelco is required to offer fixed terminations services in its RIO.

4.2 Mobile services

In the Consultations on interconnection, the TRA has outlined an approach to market definition which leads to the conclusion that each mobile network constitutes a relevant market for the termination of calls on its network.ⁱⁱ The TRA also noted its reluctance to declare a relevant market for termination of calls on the SMO’s network, given that it does not as yet have any customers. However, the TRA acknowledges that there is some incompleteness in defining a relevant market for termination on Batelco’s network, while providing no guidance as to when termination on the SMO’s network would be treated similarly. The TRA has thus looked again at the issues. Alternative market definition possibilities considered were for:

- mobile termination and retail services in Bahrain, and
- termination on mobile networks in Bahrain (favoured by MTC).

In the case of the first bullet, the link between termination and retail pricing is a close one. It can be seen that if network *A* raises its termination charge for calls made by users of network *B*, network *B* is likely to try and recover the cost increase by raising its own prices, either the call charges paid by its own customers when calling a subscriber to *A*, or more likely, by raising its own termination charges for calls from users of Network *A*.ⁱⁱⁱ

For the relevant market to be as per the second bullet, the relationship between mobile termination and retail services would have to be too weak to provide the link outlined above. This would require each network to raise its retail price for calling the other network in response to a termination price increase by the other network rather than retaliate by raising its own termination charge to the other network. The TRA finds this unlikely and has rejected the market definition specified by the second bullet.

The TRA accordingly determines the relevant market to be for :

- Mobile termination and retail services in Bahrain.

The question then arises as to what elements of that market should be regulated.

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Where networks are of similar size, and competition between them is vigorous, there is unlikely to be a need to regulate termination charges between MNOs. However, as outlined in endnote iv, where networks are of very different sizes, the larger network may gain a considerable competitive advantage by raising its termination charge and thus the retail prices paid by subscribers of each network to call subscribers on any other network. This is because the larger network is able to provide its subscribers with on-net call advantages that the other networks cannot match.

The analysis above and that provided by the academic literature, suggests that where the termination charge of one MNO (call it *A*) is regulated and the other (call it *B*) not, the network *B* will be able to profitably increase the termination charge it levies on network *A*'s callers as *A* will not be able to raise its own termination charge to compensate, and must therefore raise the retail price for calls to network *B*. This is a type of externality cost.^{iv} It suggests that termination charges may eventually need to be regulated for each MNO.

The TRA has previously stated that regulation of individual operators will be mainly based on a finding of enduring market dominance. However, externalities are another form of market failure that sometimes requires corrective regulatory intervention. Thus, the TRA may decide to intervene to correct this type of market failure where it is judged to be necessary.

In the Consultation paper the TRA suggested that reciprocal termination charges may be warranted at this time. The TRA notes, however, that the SMO's long-run termination costs may be slightly higher than for an efficient Batelco, not least because of second mover disadvantages. The TRA therefore reserves its judgement, at this time, on whether the SMO's termination charges should be the same as for Batelco's mobile operator.

Although the TRA has determined the market to include not only termination but also mobile retail services, the TRA presently has no intention of regulating retail mobile services.

Call terminating interconnection is, however, essential for the SMO and Batelco is accordingly required to include call termination services on its Mobile network, in its RIO.

One of the conditions provided for the SMO was that it could obtain temporary national mobile roaming on Batelco's GSM network. The SMO has stated that it will not require national roaming on Batelco's mobile network, and this means that some interconnection services that might otherwise have been required of Batelco's mobile network, are not now required.

Interconnection offered by Batelco's mobile network must preserve services that are exchanged between end-users and which are considered standard on mobile networks. Such services include:

- Basic voice services,
- Basic and value added messaging, and
- Other value added data services

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4.2.1 International services

In the Consultation documents it was noted that the SMO has rights to provide certain international services to users that are connected to its networks. In the interim period before full liberalisation in 2004, the SMO has a range of options for the immediate provision of international services to its customers. It may:

- seek connection to Batelco's international services on interconnection terms, i.e. an incremental cost based option, or
- enter into a specific commercial arrangement with Batelco for the carriage of international traffic to and from the licensee's network, i.e. an access option to Batelco's switched international services typically based on retail minus or wholesale pricing, or
- rent a circuit or circuits from Batelco with which to independently connect the licensee's Mobile Network to any other network (including carriers' carriers) outside Bahrain.

Outgoing international calls

In regard to outgoing calls, for the first two options, the SMO would need to buy a switched service from Batelco. This clearly includes more than a service comprised of switching and international transit. The operator receiving the call (Batelco) needs to have an arrangement with the sending operator relating to payment that the foreign operator will receive for transiting, switching, and terminating the call. At present, in Bahrain, Batelco is the only operator that has these arrangements. They represent Batelco's *international correspondent* relationships. The SMO needs access to *international correspondent* services in order to have its international calls delivered and terminated abroad. As noted already, the TRA does not consider there to be a close substitute for this service in Bahrain at this time.

As noted above, other services that the SMO will need in order to provide out-going call services for its customers include international switching, and domestic and international transit. At least until July 2004, the TRA considers these services to be part of the same relevant market. This is because the SMO is unlikely to be able to economically provide any of them prior to July 2004, and they are virtually perfect complements, i.e. an international call service cannot be provided unless all of these constituent services are provided. This analysis may change following full liberalisation. While the switched services provided by Batelco for the first two options above are closely related from a physical perspective, they differ in the Batelco license obligations under which they are provided. This may result differing transaction structures (and cost bases) being represented for the two options within the proposed accounting separation that will be applied to Batelco.

A number of difficulties associated with the leased line option were described in the Consultations. Nevertheless, the choice of utilising either switched services or dedicated capacity means that the SMO is not limited to a single bottleneck facility, i.e. Batelco's international switching and correspondent relationships, in order to provide international services to its customers in the period until July 2004. Therefore the TRA does not consider it necessary to require Batelco to provide connection to its international switched services for the SMO on the basis of interconnection (i.e. LRAIC) rates. The TRA considers that, were the choice of alternative dedicated leased line

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provision not available to the SMO, then, as noted in Section 2 above, it would be reasonable for the TRA to require the provision of incremental cost based international interconnection from Batelco.

However, the choices for the SMO to obtain international connectivity still remain limited to the facilities of Batelco. It is, therefore, at risk of a potential price squeeze by the incumbent since it needs to obtain services from its competitor in order to provide the necessary international services to its customers. It is conceivable that the incumbent could seek to manipulate the costs, prices and profits of services within parts of its business such that the SMO faced higher wholesale charges. In these circumstances the setting of the prices charged to other operators by a dominant operator may require regulation.

The requirements relating to the provision of international and national leased lines by Batelco to other licensed operators will be further addressed in the forthcoming consultation "Dominance in certain markets and the provision of access". However, it can be seen that Batelco is self-evidently dominant in the market for international leased lines.

With regard to the setting of access or wholesale prices for switched services, in its response to the second consultation, Batelco considered that the discount provided to the SMO for handling outgoing calls originated on the SMO's network, should be the retail price minus the costs Batelco will avoid in supplying the service on a wholesale rather than retail basis. The TRA notes that this approach to pricing interconnection has been referred to as the Efficient Component Pricing Rule or ECPR. Referring to Figure 4.1 below, the price charged by Batelco to the SMO would be $P_4 - Y$ where Y represents the costs avoided in providing the service on a wholesale rather than retail basis.

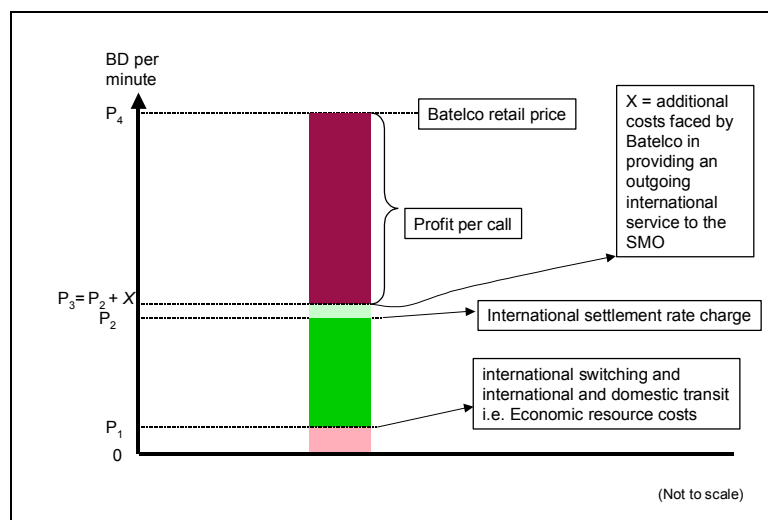


Figure 3.1: Component parts of outbound international call charges

Several unanswered criticisms have been aimed at this pricing rule.^v The TRA does not consider the ECPR to be suitable for pricing interconnection and access in Bahrain.

Having regard, therefore, for the level of dependence of the SMO on the services of Batelco, the TRA requires that the SMO be provided with access to Batelco's full range of outgoing international call services at a **substantial** discount to retail prices. The

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discount should be negotiated between the parties. Where the parties cannot reach an agreement within a reasonable period, the TRA may intervene, at the request of either party.

Without intending to pre-judge the outcome of the forthcoming consultation on “Dominance in certain markets and the provision of access” noted above, the TRA expects that international leased lines will also be required to be provided to licensed operators at a discount to retail prices.

In addition the TRA will implement the appropriate level of accounting separation between Batelco’s international facilities and services and its domestic services. This will enable the purchasing of international services by any licensed operator in Bahrain to be transparent.

Incoming international calls

In regard to incoming international calls that are for termination on the SMO’s network, Batelco recommended that these be considered simply as a call termination service which Batelco would buy from the SMO, i.e. the market would be for mobile termination services. There would be no need for specific regulatory action in regard to incoming international calls for the SMO, as the SMO is not dominant in the relevant market relating to mobile termination (as adopted in this determination).

It is important to note that these are calls made to the SMO’s numbered customers. The TRA wants to avoid an outcome that results in Batelco taking the substantial profit per call that it earns through levying a settlement rate on the originating foreign operator and buying a low cost termination service from the SMO.^{vi}

The TRA considered the following two possibilities that are capable of providing for much of these profits to be passed to the SMO for incoming calls to the SMO’s customers:

1. Batelco on-sells the termination service it buys from the SMO, to foreign operators and receives the full settlement rate incoming per call. The SMO could potentially set a price for termination of international calls that effectively transfers to itself, the bulk of the excess profit contained in the settlement charge collected by Batelco. Batelco’s bargaining tool is to refuse to buy the termination service. Such an outcome would require the TRA to set the price for this type of call termination, or
2. The SMO contracts with Batelco to provide international switching, transit and correspondent services so that the SMO can receive international incoming calls. Batelco accepts incoming international calls for the SMO, transmits, switches and interconnects them, collects the money from the foreign operator, and hands over the call and the money received, less an agreed amount for information processing and billing, transit and switching.

In either case Batelco is collecting revenues (or off-setting them against its own liabilities to foreign operators), providing for information processing and billing, transit and switching.

In the first case, the service would be the termination of incoming calls on mobile networks. The relevant market would be that for mobile termination and retail services in Bahrain. The market(s) in which Batelco is providing its part of the service has no bearing here as the SMO does not contract in this market(s) when terminating calls that have been handed over to it by Batelco.

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In the second case, the relevant market is much as for outgoing calls, which we have discussed above and in the Consultations. This approach focuses on the bottleneck for the provision of international services by the SMO, and the TRA has decided to adopt this approach. Consequently, in regard to incoming foreign calls that are for termination on the SMO's network, Batelco must provide an interconnection service to the SMO, the details of which must be included in the RIO.

4.2.2 Directory information

There are complex economic and public policy issues involved in the liberalisation of directory information services. While the TRA notes that Batelco's licence requires it to provide other licensed operators with access to Batelco's directory information database, there are several issues that need to be addressed before liberalisation of directory information services and products can proceed. Until liberalisation occurs, Batelco is the only entity legally permitted to provide directory information services and products from its own directory information database. This suggests that Batelco is dominant in the provision of these products and services. These issues will be discussed in detail in a forthcoming Consultation addressing access to Batelco's services. However, the TRA requires Batelco to specify the terms and conditions of access to the full range of DQ services, within the RIO.

4.2.3 Emergency call services

In the Consultation documents on interconnection, the TRA proposed that in regard to emergency services, Batelco should provide the SMO with interconnection and carriage across its network of emergency calls and the technical features required in order to provide access to its emergency call processing facilities. Batelco has agreed to this and the TRA therefore requires Batelco to include in its RIO, details of its emergency services access offer. These services should be provided to the SMO on a forward-looking LRAIC basis.

4.3 Relevant Interconnection markets in which Batelco is dominant

The TRA's analysis indicates that the relevant operator-to-operator 'product markets' for interconnection services, in which Batelco is determined by the TRA to be dominant, are as follows:

1. call termination on public fixed networks;
2. the market for mobile call termination and retail service,
3. the market for international correspondent services, including international switching and conveyance.

The geographic scope of these markets is the Kingdom of Bahrain. Reasons for this are:

- Termination applies to the whole network of an operator. Operators are licensed to provide service over the whole of Bahrain.
- Given license coverage, there appear to be no differences in the demand and supply of either of these services that would permit more narrow market definitions at this stage.

With liberalisation after July 2004, more narrow geographic definitions may evolve.

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There are several relevant markets relating to higher-level services to which licensed service providers or operators will require access. Where these involve access by the SMO, the TRA will ask Batelco in the forthcoming Consultation on access, to include full details in its RIO. In other cases Batelco will be asked to provide RAOs. The services that should be included in the RIO are:

4. Access to Batelco's emergency call services.
5. Access to Batelco's DQ information.^{vii}

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5 Review

In a national telecommunications market, such as Bahrain, that is expected to be subject to considerable development and change over the short to medium term, it is appropriate to review market analyses and the determination of market power on a regular basis. This will help to determine how competition is developing and the extent to which it is meeting the overall objectives of choice, quality and value in telecommunications services for end-users in Bahrain.

This determination of market power with regard to interconnection markets will clearly need to be reviewed on a recurring basis. The determination will be reviewed no later than 18 months from the date of this determination unless it has been reviewed in the intervening period. If, in the TRA's opinion, market circumstances suggest that an earlier review of the determination would be appropriate, or if a market player or other such interested party should present a compelling case for an earlier review, then the TRA will be prepared to consider undertaking it.

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A1 Responses to the second consultation

The TRA received two responses to its second consultation document. These responses were from:

- Batelco
- MTC/Vodafone

The pertinent issues raised in the responses in relation to interconnection markets are addressed in the discussion of relevant markets in this document.

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Endnotes:

ⁱ Under Section 3 (c) 18 of the Telecommunications Law the TRA may find an operator to be dominant in an interconnection market, but specify different terms and conditions of interconnection.

ⁱⁱ The main reason was the existence of an externality which resulted in subscribers not taking due account of the prices paid by others to telephone them.

ⁱⁱⁱ This causes network *A* to raise its retail price for calls to network *B*. Where two networks are of different sizes, the strategy of the larger network is likely to raise its termination charges and thus retail prices paid by subscribers of both networks to call subscribers on the other network. The advantage to the larger network is through its on-net calls making up a larger share of its customers total calls, than will be the case for subscribers of the smaller network. As these prices have not increased and may have even decreased, this strategy makes the larger network more attractive to subscribers generally.

^{iv} Externalities are a form of market failure. They are a benefit or cost caused by an event, but which are not taken fully into account in the decision to go ahead with the event. Examples include: a beekeeper who incidentally provides a pollinating service for nearby farmers (a beneficial externality) and cigarette smoking which gives rise to externality costs borne by others around them who must passively smoke and which has been proven to damage health.

^v Problems with employing ECPR as an interconnection or access pricing rule in Bahrain, are:

- it assumes calls originated on the SMO's network simply substitute for calls that would have been originated on Batelco's network. i.e. that the opportunity cost to Batelco is the retail price foregone, less any savings Batelco makes by having part of the call provided by the SMO. This assumption belies the fact that new networks, and especially new mobile networks, result in significant growth in traffic, and
- the type of competition envisaged by the rule is 'for the market' and not competition 'in the market'.

^{vi} A *settlement rate* represents the portion of the *accounting rate* that the operator receives. The accounting rate provides a mechanism for setting the amounts operators in different countries charge each other for transiting, switching and terminating international phone calls. Prices are normally set reciprocally. These prices tended to be set in a monopoly environment and are usually many times greater than the costs involved. The accounting rate system is being replaced as countries open up their markets to competition.

^{vii} Note, that while access to these services may be the subject of regulation which is not concerned with interconnection between licensed network operators, these services are normally also included in a RIO.